PATENT COOPERATION TREATY

From the:
INTERNATIONAL SEARCHING AUTHORITY

To:

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GRIFFITH HACK
16 DEC 2004
1. FC
2. JMC
3.

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	15 DEC 2004
Applicant's or agent's file reference FP20427	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/AU2004/001304	24 September 2004	26 September 2003

International Patent Classification (IPC) or both national classification and IPC
Int. Cl. [7] E03C 1/10, E03D 1/32, F16K 31/30

Applicant
SENSEI TRADING PROPRIETARY LIMITED et al

1. This opinion contains indications relating to the following items:

- [X] Box No. I — Basis of the opinion
- [ ] Box No. II — Priority
- [ ] Box No. III — Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- [ ] Box No. IV — Lack of unity of invention
- [X] Box No. V — Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- [ ] Box No. VI — Certain documents cited
- [ ] Box No. VII — Certain defects in the international application
- [X] Box No. VIII — Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the IPEA/AU	Authorized Officer
AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929	**DAVID LEE** Telephone No. (02) 6283 2107

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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

   a. type of material

      ☐ a sequence listing

      ☐ table(s) related to the sequence listing

   b. format of material

      ☐ in written format

      ☐ in computer readable form

   c. time of filing/furnishing

      ☐ contained in the international application as filed.

      ☐ filed together with the international application in computer readable form.

      ☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

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Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims **20, 22**	**YES**
	Claims **1-19, 21**	**NO**
Inventive step (IS)	Claims **22**	**YES**
	Claims **1-21**	**NO**
Industrial applicability (IA)	Claims **1-22**	**YES**
	Claims	**NO**

2. Citations and explanations:

D1: US 3970101 A

D2: US 2766769 A

D3: US 5551466 A

D4: US 5836346 A

D5: GB 742391 A

D6: US 1279468 A

NOVELTY Claim 1-19, 21:

1. Claim 1 - Each of the above citations D1-D3 disclose all the features of claim 1. In particular:
   - 1.1. Inlet valve: D1 fig. 1, item 10; D2 fig. 1; D3 fig. 3
   - 1.2. comprising a valve body: D1 fig. 1, conduit (26); D2 fig. 1, valve stem guide (3); D3 fig. 3, annulus (121)
   - 1.3. and a movable valve element: D1 fig. 1, actuator member (64); D2 fig. 1, valve stem (4); D3 fig. 3, spindle (117)
   - 1.4. having a clearance portion between the movable element and the valve body: D1 fig. 1, the space between the conduit (26) and the actuator member (64) communicating with the atmosphere through holes (79) or alternatively, the space between the fins (76) of actuator (64) and the conduit (26); D2 fig. 1, the clearance provided by the annular channel (46), communicating with the atmosphere through outlet opening (33) and pipe (37); D3 fig. 3, the space between the spindle (117) and annulus (121), communicating with the atmosphere through popper (125 see also figure 4)
   - 1.5. causing a gas gap to prevent unwanted flow of liquid from the vessel into the supply line when the valve is closed: D1 column 3, lines 38-55; D2 column 3, lines 51-60; D3 column 4, lines 46-61
2. Claim 2 – The vessel is a cistern of a toilet: D2 and D3 are directed to a toilet cistern – eg. see D2 claim 1; D3 column 1 line 5-10
3. Claims 3, 16 – The valve has adjustable height: D1 bracket (93) provides a series of holes to which housing (14) of valve (10) can be attached at adjustable height
4. Claims 4-8 – The features of these claims are readily apparent in the figures of D1-D3

Continued in Supplemental Box

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. Claim 3 is not clear – the it defines a new feature of the valve (adjustable support member) but does not state that this feature is to be incorporated
2. Many of the claims lack clarity due to lack of antecedent:
   a) Claims 3, 16, 17 are each appended to "any preceding claim" however each refer to "the cistern" which is only introduced at claim 2
   b) Claim 5 is appended to "any preceding claim" however "the elongate member" is only introduced at claim 4
   c) Claim 7 is appended to "any preceding claim" however "the sealing end" is only introduced at claim 6
   d) Claim 12 lacks an antecedent to "the plunger"
   e) Claim 15 is appended to "any preceding claim" however "the plunger guide housing or shroud" is only introduced at claim 14
   f) Claim 18 is appended to "any preceding claim" however "the element responsive to changes in water level" is only introduced at claim 17
   g) Claim 20 lacks an antecedent to "the float"
3. Claim 15 is not clear for the additional reasons:
   a) The phrase "clearance between the plunger" does not make sense
   b) It would seem that the "reduced bore portion" should in fact be an *increased* bore portion if it is to provide a clearance.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: **BOX V**

5. Claim 9 – Clearance portion is located on the movable element: D1 the clearance portion can be considered the reduced diameter of the actuator element (64), or alternatively, the gaps between the fins (76) of actuator (64); D2 the central annular channel (46); D3 the looseness of fit of the spindle (117) in the annulus (121)
6. Claims 10-12 – The clearance portion is a reduced diameter portion of the movable element located centrally or towards one end of the movable element on the outside surface: D1 the reduced diameter of actuator member (64); D2 the reduced diameter (annular channel 46) of valve stem (4)
7. Claim 13 – The clearance portion is continuous or segmented: D1 has both types of clearance portion (the reduced diameter of the actuator member (64) and the clearance of the fins (76); D2, D3 have continuous clearance portions
8. Claim 14 – A plunger guide housing: D1 fig. 1, conduit (26); D2 fig. 1, valve stem guide (3); D3 fig. 3, crown (123)
9. Claim 15 –The plunger guide housing has an aperture etc: D1 holes (79); D2 outlet opening (33); D3 popper bore (125)
10. Claims 17-19 – The features of these claims are readily apparent in the figures of D1-D3
11. Claim 21 – See comments in 1.5 above

INVENTIVE STEP Claims 1-21:

12. Claim 1-19, 21 as above
13. Claim 2 lacks an inventive step in the light of D1: The use of valve (10) in a toilet cistern would be obvious.
14. Claims 3, 16 lack an inventive step in the light of D2 or D3 in combination with D4: It would be obvious to combine the valve of D2 or D3 with the adjustable riser for a cistern inlet valve disclosed in D4. Such an adjustable feature could readily be applied to the risers of D2 or D3 and it would be obvious to a skilled worker to do so in order to solve the problem of making the valve height adjustable.
15. Claim 20 lacks an inventive step in the light of D2 in combination with D5: D5 discloses a linkage for a float of a cistern so that the float has a snap action to abruptly close the valve. A skilled worker would readily combine these two documents to solve the problem of a more abrupt closure of the valve.

NOTE that D6 is considered to be merely related art. Referring to D6, figure 2, The structure of the inlet valve is very similar to that embodied in the present invention, including an air gap (at bore 28) as shown between the plunger (30) and the plunger guide (26). However there is no teaching that the gap is to allow air into the valve in order to prevent siphoning into the supply. Indeed the configuration shown in figure 1 is such that the entire riser will be deeply submerged when the float pivots into position to close the inlet valve. There would be no reason that a skilled worker would consider D6 relevant to solving the problem of preventing siphoning into the supply line.